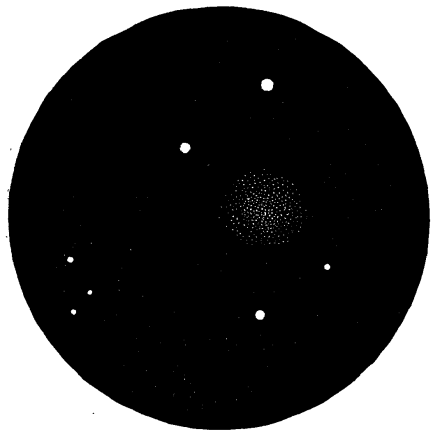
Discovery and Observations of Comet Brooks (d 1895).

By W. R. Brooks.

I have the honour to communicate to the Society some notes on the discovery and observations of my comet of November 21. While sweeping the south-eastern heavens with the 10-inch equatorial, at about 14 hours, standard 75th meridian time, I picked up a large nebulous mass, which I at once recognised as new.



Discovery field. Comet Brooks.

The discovery place was R.A. $9^h\ 51^m\ 50^s$, Decl. S. 17° 40′.

I give herewith a chart of the discovery field.

In a few minutes after securing the discovery position the sky, which up to that time had been remarkably clear, became clouded, but fortunately not before I had detected motion, which proved to be rapid and in a northerly direction. For over an hour not a star was to be seen in any part of the heavens, but by the driving-clock the telescope was kept on the object, hoping for a break in the clouds. This came in about an hour, and the direction of the comet's motion was ascertained beyond a doubt. The morning was intensely cold, the thermometer standing at 10° above zero, and when a little later I went down to the telegraph office, about one mile distant, to announce the discovery, it was snowing furiously.

Nearly a week of storms and cloudy weather followed, so that it was not until the sixth morning after the discovery that I was able to secure another observation of the comet.

It had in this interval, with its rapid motion of three degrees daily, moved over a great distance, so that on the morning of November 27, $15^h\ 40^m$, it was observed in R.A. $9^h\ 29^m\ 30^s$; Decl. N. 0° 47′; and the comet appeared larger and brighter than at discovery.

The following observations have since been made :—

November 28, $17^h\ 30^m$; R.A. $9^h\ 23^m\ 55^s$; Decl. N. 3° 12′. The comet is slightly brighter than it was yesterday morning.

December 12, $9^h\ 30^m$ (evening observation); R.A. $7^h\ 9^m\ 30^s$; Decl. N. 58° 19′. Considerably fainter. The comet is now circumpolar, and evening observations are possible.

December 13, 7^h; R.A. $6^h\ 55^m\ 20^s$; Decl. N. 60° 23′. Large, but pretty faint.

December 16, 9^h; R.A. $5^h\ 58^m\ 10^s$; Decl. N. 65° 30′. Faint.

The comet has at all times appeared large, round, and with very slight central condensation.

Smith Observatory, Geneva, N.Y., (U.S.A.) :
1895 *December* 21.

Elliptical Orbit Elements of Comet b 1894 (*Gale*). By Rev. Thomas Roseby, M.A., LL.D.

The following elements are based on four normal places, derived, the first two from Mr. Tebbutt's Windsor observations only, the last two from observations made at Windsor (N.S.W.), Melbourne, Liverpool, Greenwich, Lyons, Besançon, and Dudley (U.S.A.). The time interval between the extreme normal places is 78 days. I have to express my indebtedness to Mr. J. Tebbutt, F.R.A.S., of Windsor, Mr. R. T. A. Innes, F.R.A.S., and Mr. C. J. Merfield, of Sydney, for help without which the labour of this computation would hardly have been undertaken. The residuals for the middle places seem fairly satisfactory. The orbit elements indicate a period for the comet of 1001·18 years. The elements are :

Comet b 1894 (*Gale*).

τ 1894 April 13·393265 G.M.T.

π	170° 35′ 52″·42	Mean equinox 1894·0.
Ω	206 24 11·90	
i	86 58 55·73	
log q	9·9925685	
log e	9·9957130	

Motion direct.

The residuals for the mean places are :

$$d\lambda_{,} \cos\beta_{,} = -0''.59$$
$$d\beta_{,} = -1''.64$$
$$d\lambda_{,,} \cos\beta_{,,} = +1''.48$$
$$d\beta_{,,} = +1''.27$$